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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/555,625

06/01/2000

Makoto Sasaki

13629

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7590

07/06/2004

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EXAMINER

HU, SHOUXIANG

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/555,625

Applicant(s)

SASAKI ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 2-9, 12-19 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restriction

1. Claims 1-21 are pending in this application; and claims 1, 11 and 20 are active in this Office action, in view of the previous Office action.

Drawings

2. The replacement drawings were received on 10/27/03. These drawings are approved.

Claim Objections

3. Claim 1, 11 and 20 are objected to because of the following informalities and/or defects:

Claim 1 recites the subject matters that the recited wire is coated and in contact with Ti along at least one surface and with titanium oxide along at least three surfaces, but fails to clarify how many such covered surfaces the recited wire has. According the disclosure (see Fig. 3), the wire has only four major side surfaces; and, if at least one of them has already been covered with titanium, the recited titanium oxide would only cover at most the rest three side surfaces, instead of at least three side surface. With respect to applicant's arguments relevant to the claim objections, it is noted that a gate electrode in a thin film transistor (TFT) is normally in the form of an elongated gate line that extends to neighboring TFTs. And, the original disclosure of the instant application

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does not disclose the subject matters that end surfaces of the elongated gate electrode in a TFT are also covered with the protection coating(s).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11 and 20, as being best understood in view of the above claim objections, are rejected under 35 U.S.C. 103(a) as being unpatentable over Batey et al. ("Batey"; US 5,831,283) in view of Masaki (JP 10-153788, 06/98; of record).

Batey discloses a wire as a gate electrode line in a TFT LCD (see col. 1, line 33, through col. 2, line 33), comprising a Cu layer contacted along a bottom side surface with a Ti coating.

Although Batey does not expressly disclose that the other three side surfaces of the wire can be covered with a titanium oxide coating, one of ordinary skill in the art would readily recognize that titanium oxide is an art-recognized common coating material for a gate electrode line for its better protection, as evidenced in Masaki (see its DERWENT BASIC-ABSTRACT, and also see Figs. 2 and 5A), wherein the wire is coated and in contact with a metal oxide layer (21a or 33b) along the three upper side surfaces; and the metal oxide can be titanium oxide.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the titanium oxide upper surface coating of Masaki into the TFT LCD of Batey, so that a TFT LCD with improved protection to the gate electrode line would be obtained.

Regarding claim 20, an LCD device such as the one in Batey and/or Masaki normally inherently comprises a second substrate opposing the TFT-forming substrate with the liquid crystal layer disposed therebetween.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 11 and 20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
June 29, 2004



SHOUXIANG HU
PRIMARY EXAMINER